FIREFIGHTER II MOD B

Emergency Medical Care

2-8 EMERGENCY MEDICAL CARE (*2-3*)

Authority having jurisdiction (AHJ) must retain proof of completion of objectives satisfying objectives listed below. The required practical completion may be indicated on the practical key that remains in the fire department training jacket of the individual.

The objectives may be accomplished by completing courses hosted by:

American Red Cross: Basic First Aid
American Red Cross: First Responder
American Heart Association: CPR only
Illinois Department of Public Health, (ONE ONLY OF THE FOLLOWING): EMT-B, EMT-D, EMT-I, EMT-P
National Safety Council: Basic First Aid

2-8.1 Identify the principles of infection control and universal blood and body fluid precautions as prescribed for public safety officers.

2-8.2 Identify the use, decontamination, disinfection, and disposal of personal protective equipment used for protection from infection.

2-8.3 Identify the following procedures as defined in the American Heart Association or American Red Cross CPR manuals:

- **2-8.3.1** Adult single-rescuer CPR.
- **2-8.3.2** Child single-rescuer CPR.
- **2-8.3.3** Infant single-rescuer CPR.
- **2-8.3.4** Adult two-rescuer CPR.
- **2-8.3.5** Management of an obstructed airway in a conscious adult.
- **2-8.3.6** Management of an obstructed airway in an unconscious adult.
- **2-8.3.7** Management of an obstructed airway in a conscious child.
- **2-8.3.8** Management of an obstructed airway in an unconscious child.
- **2-8.3.9** Management of an obstructed airway in a conscious infant.
- **2-8.3.10** Management of an obstructed airway in an unconscious infant.

2-8.4 Identify a primary survey for life-threatening injuries

2-8.5 Identify the characteristics of three types of external bleeding.

2-8.6 Identify three procedures for controlling external bleeding

2-8.7 Identify signs and symptoms of traumatic shock.

2-8.8 Identify the emergency medical care for a victim of traumatic shock**.**

2-8.9 Identify the characteristics of thermal burns according to degree and severity.

2-8.10 Identify the emergency medical care of thermal burns according to degree and severity.

2-8.11 Identify the signs and symptoms of ingested poisons and drug overdose.

2-8.12 Identify the method of contacting the poison control center that serves the department.

2-8.13 Identify the emergency medical care for victims of ingested poisons and drug overdoses

2-8.14 Identify the signs and symptoms of a fracture**.**

2-8.15 Identify the emergency medical care for fracture.

2-8.16 Identify the use of a resuscitation mask in the performance of single- and two-rescuer CPR.

2-8.17 Demonstrate the emergency medical care of thermal burns according to degree and severity.

2-8.18 Demonstrate the use, decontamination, disinfection, and disposal of personal protective equipment used for protection from infection.

2-8.19 Demonstrate the following procedures as defined in the American Heart Association or American Red Cross CPR manuals:

- **2-8.19.1 Adult single-rescuer CPR.**
- **2-8.19.2 Child single-rescuer CPR.**
- **2-8.19.3 Infant single-rescuer CPR.**
- **2-8.19.4 Adult two-rescuer CPR.**
- **2-8.19.5 Management of an obstructed airway in a conscious adult.**
- **2-8.19.6 Management of an obstructed airway in an unconscious adult.**
- **2-8.19.7 Management of an obstructed airway in a conscious child.**
- **2-8.19.8 Management of an obstructed airway in an unconscious child.**
- **2-8.19.9 Management of an obstructed airway in a conscious infant.**
- **2-8.19.10 Management of an obstructed airway in an unconscious infant.**

2-8.20 Demonstrate the use of a resuscitation mask in the performance of single- and two-rescuer CPR.

2-8.21 Demonstrate a primary survey for life-threatening injuries.

2-8.22 Demonstrate three procedures for controlling external bleeding.

2-8.23 Demonstrate the emergency medical care for a victim of traumatic shock.

2-8.24 Demonstrate the emergency medical care for victims of ingested poisons and drug overdoses.

2-8.25 Demonstrate the emergency medical care for a fracture.

REFERENCES:

IFSTA, Fire Service First Responder, 1st ed
Delmar, Firefighter's Handbook, copyright 2000, Chapter 22
Jones & Bartlett, Fundamentals of Fire Fighting Skills, 1st ed., Chapter 24

2-8 Emergency Medical Care

I. Identify the principles of infection control and universal blood and body fluid precautions as prescribed for public safety officers. **2-8.1** (*3-17.1*)

A. Infection Control

1. Four basic ways to spread infection

a. Direct contact: handshake or fluid contact with an infected person.
b. Indirect contact: contact with an object handled by an infected person.
c. Droplet infection: inhaling droplets discharged by coughing/sneezing of an infected person.
d. Sexual contact: transmission through close sexual contact

B. Exercise extreme care around patients with:

1. A fever of unknown origin
2. Diarrhea
3. Draining wounds
4. Bleeding wounds
5. Jaundice
6. Dialysis treatment in progress
7. A rash
8. Known history of communicable diseases

C. Precautions

1. Use an airway and pocket mask when administering artificial respiration or CPR
2. Wear exam gloves on all EMS calls
3. Take extra care to avoid needle sticks. Do not pick up needles. Identify needles to paramedics and allow them to handle needles.
4. Avoid direct skin and mucous membrane contact with blood and body fluids of an AIDS patient. Wash your hands thoroughly afterwards with soap and water as soon as possible.
5. Clean blood spills with a solution of chlorine bleach and water. Use 1/4-cup bleach per gallon of water.
6. Place clothes or linen soiled by blood or body fluids in a plastic bag marked "blood contaminated." Launder the items per department regulations.

D. Basic procedures for infection control

1. Keep your hands and equipment clean.
2. Keep inoculations up to date.
3. Keep your hands away from your face: avoid introduction of germs through the mucous membranes.
4. Avoid touching open skin lesions or any draining wounds.
5. Use exam gloves on all EMS calls.
6. Wash your hands thoroughly with soap after each patient contact. Clean your fingernails.
7. Wear a disposable mask around infectious patients.
8. Use an airway and pocket mask when performing CPR.
9. Clean your equipment after each use.
10. Place soiled linens in plastic bags for disposal or sterilization.
11. Bag contaminated items.

II. Identify the use, decontamination, disinfection and disposal of personal protective equipment used for protection from infection. **2-8.2**

The above objective will be accomplished using the specific PPE equipment designated for protection from infection by the AHJ in accordance with practices and procedures set forth by the AHJ.

III. Identify the following procedures as defined in the American Heart Association or American Red Cross CPR manuals: **2-8.3**

A. Adult single-rescuer CPR **2-8.3.1**
B. Child single-rescuer CPR. **2-8.3.2**
C. Infant single-rescuer CPR. **2-8.3.3**
D. Adult two-rescuer CPR. **2-8.3.4**
E. Management of an obstructed airway in a conscious adult. **2-8.3.5**
F. Management of an obstructed airway in an unconscious adult. **2-8.3.6**
G. Management of an obstructed airway in a conscious child. **2-8.3.7**
H. Management of an obstructed airway in an unconscious child. **2-8.3.8**
I. Management of an obstructed airway in a conscious infant. **2-8.3.9**
J. Management of an obstructed airway in an unconscious infant. **2-8.3.10**

A. Airway

1. Modified Jaw Thrust: used for trauma victims

a. Kneel beside patient's head
b. Place your hands on both sides of the patient's head and hold the head in such a way that the neck remains in a fixed, neutral position without being extended.

c. Place your fingers behind the angle of the lower jaw on each side of the patient's head.
d. Move the jaw forward with your fingers, taking care not to tilt the head back or move it to either side.

2. Head-tilt chin-lift

a. Kneel beside patient's head.
b. Place one hand on the patient's forehead and press back firmly with your palm.
c. Grasp the patient's chin with the fingertips of your other hand and lift up and forward until the teeth are nearly closed.

3. Jaw-thrust

a. Kneel above the patient's head.
b. Place your hands on both sides of the patient's head with your fingers behind the angles of the lower jaw and your thumbs on either side of the lower lip.
c. Push the jaw forward as you tilt the head backwards.
d. Open the lower lips with your thumbs.

4. Face-down

a. Kneel at the patient's side.
b. Grasp the patient's farthest shoulder with one hand and the farthest hip with the other.
c. Roll the patient gently toward you until they are resting on the side nearest you.

B. Breathing

1. Lean over the patient's head with your ear within an inch of the victim's mouth and nose.
2. Look to see whether the chest rises or falls.
3. Listen for air movement at the nose and mouth.
4. Feel for air movement on your cheek or ear.

C. Circulation

1. Feel carotid pulse on near side of patient for 5-10 seconds with index and middle fingers.

D. Severe bleeding

1. Quick visual of the patient and/or surrounding area

E. Removal of Airway Obstruction

1. Conscious Adult

a. Stand behind the standing or sitting patient and wrap your arms around the patient's waist.
b. Make a fist with one hand and place the thumb side of your fist against the patient's abdomen, slightly above the navel and well below the xiphoid process.
c. Grasp the fist with your other hand and press the fist into the patient's abdomen 6 to 10 times with quick, inward, and upward thrusts.
d. Each thrust should be distinct, and delivered with the intent of relieving the airway obstruction.

2. Unconscious Adult

a. Either kneel at the patient's side or straddle the patient's body so that you are facing his/her head.
b. Place the heel of one of your hands on the patient's abdomen, slightly above the navel and well below the xiphoid process.
c. With your other hand, press the heel of that hand into the patient's abdomen with 6 to 10 sharp, forward thrusts.
d. Move back to the patient's head, and hook your thumb over the patient's teeth and pull the jaw up.
e. Look into the patient's mouth. If you see a foreign object, carefully pull it out.
f. Open the patient's airway using the head-tilt, chin-lift method.
g. Pinch the patient's nose closed with the thumb and index finger of the hand that is on the forehead, as you maintain pressure on the forehead with the heel of the same hand.
h. Open your mouth widely, take a deep breath, and blow into the patient's mouth.
i. Watch for the rise and fall of the patient's chest.
j. If you are unable to ventilate the patient's lungs, re-position the head and try again.
k. Repeat steps "a" through "j" until you can provide ventilation for the lungs.

3. Infants

   a. Hold the infant face down so they straddle your forearm.
   b. Hold the head lower than the rest of the body and support it by holding the jaw.
   c. Rest your arm on your thigh and deliver four sharp back blows between the infant's shoulder blades.
   d. Place your free arm along the infant's back so that their head and body are sandwiched between your arms and hands.
   e. Carefully turn the infant over and position them on your thighs, so that the head is lower than the rest of the body.
   f. Imagine a line across the infant's chest that intersects both nipples. Place three fingers of one hand just below this line where it intersects with the sternum.
   g. Lift the finger closest to the nipple line, and with the remaining two fingers, administer four chest thrusts.
   h. Look into the infant's mouth and remove obstruction, if possible.
   i. Repeat steps a through h, if you cannot see obstruction.

E. CPR

1. Basic steps:

   a. Airway
   b. Breathing
   c. Circulation
   d. Assess effectiveness of CPR
   e. Continue CPR

IV. Identify a primary survey for life-threatening injuries. **2-8.4**

A. Upon arrival on the scene of a call for medical assistance a rapid assessment of the scene must be made to deem the hazard zone safe for entry by rescuers. Safety of the first responder is of utmost importance.

1. Check for the following:

a. Weapons
b. Downed wires
c. Leaking gasoline
d. Hazardous materials
e. Fire
f. Confined space
g. Terrain
h. Stability of vehicle or structure

B. As the first responder approaches the patient, a quick visual survey should be performed to assist in determining how serious the patient's condition. (This assessment should be completed in 60 seconds)

1. Assess the following visually when approaching:

a. Is the patient awake?
b. Does the situation or environment pose a threat of further harm to the patient?
c. The position of the patient
d. Any objects or people in the area of the patient that may have contributed to the injury or illness
e. Skin color of the patient (cyanotic, ashen, flushed)

C. Upon reaching the patient, the first responder must conduct a primary survey of the patient's basic signs of like and serious life threatening injuries.

1. The following items must be assessed immediately:

a. Level of consciousness

1) Is the patient awake?
2) Can the patient talk?
3) Does the patient respond appropriately?

b. Airway

1) Does the patient have a patent (open) airway?

c. Breathing

1) Is the patient breathing?
2) Assess the quality (short, rapid, deep, slow)

d. Circulation

1) Does the patient have a pulse?
2) Assess the quality (full, thready, rapid, slow, regular, irregular)

e. Major bleeding

1) Is there any obvious major bleeding?
2) If patient is laying down or seated, check under the patient for bleeding
3) Control major bleeding immediately

V. Identify the characteristics of three types of external bleeding. **2-8.5** (*3-17.6*)

A. Arterial bleeding

1. Blood spurts with the rhythm of the heartbeat.
2. Blood is bright red in color (rich in oxygen)
3. Blood loss is rapid and profuse

B. Venous bleeding

1. Blood oozes from wound at an even rate.
2. Blood is dark red or bluish in color (CO_2 and waste products)
3. Bleeding can be profuse

C. Capillary bleeding

1. Blood oozes slightly (Abrasion wounds, etc.)
2. Color of blood varies from bright red to dark red.
3. Bleeding often stops by itself

D. Human body has natural system for controlling bleeding

1. Clotting: effective when bleeding is not too serious
2. Platelets in blood combine with proteins to form clot
3. Clots close the wound and stop bleeding
4. Profuse bleeding washes away clots and requires external efforts to stop it.

VI. Identify three procedures for controlling external bleeding. **2-8.6**

A. Control of external bleeding

1. Direct pressure

a. Place a sterile dressing over the wound (controls most bleeding)
b. If not available, may use

1) Clean cloth
2) Handkerchief
3) Sanitary napkin

c. Apply pressure directly over wound using fingers or heel of hand.
d. Maintain pressure three to five minutes.
e. If injury is arm or leg, elevate it.

1) Exceptions:

a) Fractures
b) Embedded object
c) Possibility of spinal cord injury

f. When bleeding is under control, apply a pressure bandage over the wound.
g. Apply a universal dressing over original dressing firmly and secure.
h. Check for proper circulation and adjust as needed to provide blood flow below wound. (Do not remove dressing once in place).

B. Pressure points

1. Compress artery supply area

a. Temporal
b. Maxillary
c. Carotid
d. Brachial
e. Radial
f. Femoral
g. Popliteal
h. Tibial
i. Pedal

2. Cautions

a. DO NOT apply at a fracture site.
b. Use only when direct pressure and elevation fail to stop bleeding.

3. Tourniquet

a. ONLY use when all else fails

1. Apply a pad over the artery to be compressed.

a) Arm: brachial artery
b) Leg: femoral artery
c) Feet: tibial and pedal arteries
d) Lower leg: popliteal artery

2. Place a folded or rolled cloth pad on the artery at that point.
3. Use a wide, flat material, such as a cravat or folded handkerchief.
4. Wrap a tourniquet twice around the extremity and tie a half knot. Never remove once applied.
5. Place a stick, pencil or similar object on top of the half knot. Tie the ends of the tourniquet in a square knot above the tourniquet.
6. Twist the stick just enough to stop the bleeding.
7. Tie the ends of the tourniquet in place.
8. Mark TK and the time applied on the patient's forehead.

VII. Identify signs and symptoms of traumatic shock. **2-8.7** (*3-17.10*)

A. Restlessness or anxiety: often prelude to other signs.
B. Extreme thirst
C. Nausea or vomiting: may accompany thirst.
D. Dull, vacant-looking eyes; dilated pupils.
E. Cold/clammy skin: blood vessels near the skin constrict.
F. Pale or cyanotic face.
G. Rapid, shallow breathing: possibly labored, irregular or gasping; patient requires more oxygen.
H. Weak, rapid pulse: heart pumps faster to circulate oxygen.
I. Falling blood pressure: relatively late sign indicates circulatory system is collapsing. Blood pressure may fall gradually or drop suddenly.
J. Level of consciousness: patient may be sleepy, disorientated, or unconscious.
K. It is important to monitor vital signs frequently.
L. Signs of shock may be delayed for an hour or more. Do not wait for blood pressure to fall before treating.
M. Pay particular attention to elderly people: they do not withstand shock as well as others.
N. Watch children carefully: they do not exhibit signs until in deep shock. Treat shock signs in a child as an emergency.
O. Different types of shock exhibit different signs. Neurogenic shock has warm, dry skin. Anaphylactic shock causes hives, swelling of face and hands, and is life threatening.

VIII. Identify the emergency medical care for a victim of traumatic shock. **2-8.8**

A. Treatment for shock

1. Shock cannot be reversed, but proper treatment can keep it from worsening.
2. Major steps for treatment:

a. Establish an airway; always the first step
b. Administer oxygen
c. Treat the cause of shock

1) Control bleeding
2) Splint fractures as necessary

d. Position patient to reduce stress to vital systems; lying down with legs elevated.
e. Prevent loss of body heat.
f. Avoid rough handling of patient
g. Do not give patient food or drink

h. Monitor vital signs and level of consciousness frequently.
i. Arrange for immediate transportation to a medical facility.

IX. Identify the characteristics of thermal burns according to degree and severity. **2-8.9** (*3-17.8*)

A. The severity of a burn is classified by both the depth of the burn and the amount of tissue destroyed.

B. First Degree Burns:

1. Damage to superficial layers of the skin
2. Moderate sunburn or scald
3. Produce redness and pain
4. Usually heal within one week

C. Second Degree Burns:

1. Penetrate deeper into skin
2. Blistering and swelling
3. Extremely painful: nerve endings irritated.
4. Deep second degree burns less painful: nerve endings damaged.
5. Significant body fluid loss possible with damaged skin.
6. Most second degree burns heal within two-three weeks.
7. Most often caused by boiling liquids.
8. First and second degree burns are also known as partial thickness burns.

D. Third Degree Burns:

1. Full thickness burns: through the full thickness of skin and perhaps into the fatty and muscle tissues.
2. Skin is pale and dry: possibly charred and leathery with "burned" smell.
3. Usually not painful: nerve endings destroyed.
4. Rapid and significant body fluid loss due to damaged skin, hypovolemic shock.
5. Damaged skin cannot heal itself: skin contracture and grafting necessary.

E. Rules of Nines: estimate the percent of body surface burned

1. Adult

a. Head (9%)
b. Chest (9%)
c. Upper back (9%)
d. Abdomen (9%)
e. Lower back (9%)
f. Each arm (9% each: x2 = 18%)
g. Front of each leg (9% each: x2 = 18%)
h. Back of each leg (9% each: x2 = 18%)
i. 1% for the groin (1%)
j. Total for all: 100%

2. Children

a. Front of head (9%)
b. Back of head (9%)
c. Front of torso (18%)
d. Back of torso (18%)
e. Each arm (9% each x 2 = 18%)
f. Each leg (14%)
g. Total for all: 100%

F. Other determining factors to severity of burns

1. Minor burns

a. First degree burns on less than 20% of the body surface.
b. Second degree burns on less than 15% of the body surface.
c. Third degree burns on less than 2% of the body surface.

2. Moderate burns

a. Second degree burns involving 15 to 30% of the body surface.
b. Third degree burns involving 2 to 10% of the body surface

3. Critical (severe) burns

    a. Respiratory injury
    b. Face: psychologically damaging
    c. Hands and feet: swelling may cut off circulation.
    d. Genitalia and buttocks: prone to early infection.
    e. Fractures or major soft tissue injury
    f. Electrical and deep acid burns
    g. Burn patients with underlying medical problems, heart condition or diabetes, etc.
    h. Very young children: lower resistance to infection.
    i. Elderly patients over 60 years of age: underlying medical conditions and lower resistance.

X. Identify the emergency medical care of thermal burns according to degree and severity. **2-9.10**

A. General

1. STOP THE BURNING PROCESS.
2. Maintain the ABC's
3. Help relieve pain
4. Treat for shock
5. Aid in the prevention of infection

B. Thermal

1. Extinguish any clothing on fire
2. Check for signs of respiratory involvement.

    a. Burns around face
    b. Patient who has been unconscious in a burning area
    c. Patient who has been exposed to smoke or hot gases.
    d. Singed nasal hair
    e. Sooty sputum
    f. Hoarseness
    g. Cyanosis

3. Administer oxygen
4. Take patient's vitals signs

    a. 5 minute intervals
    b. Watch for increasing pulse rate
    c. Watch for signs of shock

5. Cover the burns with a dry sterile dressing

    a. Exception: eyes or eyelids: sterile moist dressing

C. Chemical

1. Water soluble

    a. Flush area with large amounts of water
    b. Remove contaminated clothing
    c. Continue flushing for at least 15 minutes
    d. Prevent personal injury by avoiding skin or clothing contact.
    e. After flushing is complete, apply dry sterile dressing.

2. Dry (non-soluble)

    a. Dry lime

        1) Brush from clothing and skin
        2) Flush with LARGE quantity of water

    b. Phenol

        1) Place patient under running water
        2) Wash affected area with alcohol or oil

D. Chemical burns to eyes

1. Flush the eyes for at least 20 minutes
2. Cover eyes with sterile moist dressing

XI. Identify the signs and symptoms of ingested poisons and drug overdose. **2-8.11** (*3.17-11*)

A. Variety of symptoms:

1. Nausea and/or vomiting
2. Diarrhea
3. Drowsiness or unconsciousness
4. Cramps or severe abdominal pain
5. Abnormal breathing
6. Abnormal or irregular pulse rate
7. Convulsions
8. Burns or stains around the victim's mouth
9. Unusual breath odors or odors on the victim's clothing.

10. Sweating
11. Dilated or constricted pupils
12. Excessive salivation or foaming at the mouth.

B. Drug overdoses

1. Many drug users take combinations of drugs to heighten effect. This can lead to life-threatening physical and behavioral systems injuries.
2. Emergency intervention is more effective with orally taken drugs, because there is a short time before absorption into the blood stream.
3. Injected or inhaled drugs are absorbed and take effect almost immediately.
4. Street names of drugs are important to know in determining appropriate treatment.

XII. Identify the method of contacting the poison control center that serves the department. **2-8.12** (*3-17.12*)

A. Poison Control Centers or hospitals are available for diagnosis and treatment 24 hours a day.
B. Record the local/regional Poison Control Center or hospital telephone number in easily accessible location.
C. If you suspect poisoning, contact the Poison Control Center immediately.

XIII. Identify the emergency medical care for victims of ingested poisons and drug overdoses. **2-8.13**

A. Perform initial assessment (ABC's)
B. Contact nearest Poison Control Center or hospital with essential information ((ask bystanders, search victim (be alert for needles), and immediate area))
C. Perform basic life support as necessary and transport to hospital immediately.
D. Administer first aid as directed by Poison Control Center or hospital.
E. Speak to patient in a soothing voice and try to reduce anxiety and/or apprehension.
F. Call for police assistance immediately with agitated, combative or violent patients.

XIV. Identify the signs and symptoms of a fracture. **2-8.14**

A. A fracture is a break in the continuity of bone and IS usually accompanied by a muscular spasm in the area of the fracture.

B. Two classifications of fractures:

1. Closed or simple: overlying skin is intact.
2. Open or compound: There is a wound over the fracture site. Bone ends may or may not protrude.
3. Significant bleeding may occur with either type.
4. Open fractures are more serious: risk of contamination and infection.

C. Signs and symptoms

1. Deformity: extremity angled unnaturally.
2. Pain: tenderness and soreness at site of fracture.
3. Crepitus: grating sound when injured extremity is moved.
4. Swelling and discoloration: may or may not be immediate.
5. Loss of function: extraordinary pain with movement of injured extremity.
6. Exposed bone fragments: definite sign of fracture.

XV. Identify the emergency medical care for fracture. **2-8.15**

A. Sling and swathe to immobilize the arm against the chest.

1. Ask patient to place injured arm in comfortable position across the chest.
2. If patient cannot hold arm in place, have partner or another individual hold it.
3. Slip a triangular bandage between the injured extremity and the patient's chest with the long edge of the bandage laid along the patient's side opposite the injury with one point of the bandage extending beneath the elbow on the injured side.
4. Bring the bottom edge of the bandage up and over the forearm and tie it to the other end of the bandage to one side of the patient's neck.
5. Tie or pin the pointed the pointed edge of the sling at the elbow to form a cradle for the patient's elbow.
6. Put another triangular bandage around the patient's chest and injured arm over sling.
7. Bring the swathe ends together under the arm on the uninjured side and puts padding beneath the arm to protect the patient's armpit.

B. Pillow splint: The best way to immobilize an injured foot is splinting it with a pillow by molding the pillow around the foot and tying (or safety pinning) it.

1. Mold the pillow around the injured extremity
2. Fasten in place with safety pins or cravats

C. Rigid splints: Inflexible splint to provide stability to the injured limb.

1. One individual grasps the extremity above and below the fracture site and applies gentle traction.
2. Attach the splint to the injured extremity.
3. Wrap the limb and splint in self-adhering bandages (should be tight enough to hold splint, but not so tight as to cut off circulation)

XVI. Identify the use of a resuscitation mask in the performance of single- and two-rescuer CPR**. 2-8.16**

The above objective shall be satisfactorily completed using the specific resuscitation mask(s) designated for use in performing CPR by the AHJ.

XVII. Demonstrate the emergency medical care of thermal burns according to degree and severity. 2-8.17 (*3-17.9*)

A. General

1. Stops the burning process.
2. Maintains the ABC's
3. Helps relieve pain
4. Treats for shock
5. Aids in the prevention of infection

B. Thermal

1. Extinguishes any clothing on fire
2. Checks for signs of respiratory involvement.

a. Burns around face
b. Patient who has been unconscious in a burning area
c. Patient who has been exposed to smoke or hot gases.
d. Singed nasal hair
e. Sooty sputum
f. Hoarseness
g. Cyanosis

3. Administers oxygen
4. Takes patient's vitals signs

    a. 5 minute intervals
    b. Watches for increasing pulse rate
    c. Watches for signs of shock

5. Covers the burns with a dry sterile dressing

    a. Exception: eyes or eyelids: sterile moist dressing

C. Chemical

1. Water soluble

    a. Flushes area with large amounts of water
    b. Removes contaminated clothing
    c. Continues flushing for at least 15 minutes
    d. Prevents personal injury by avoiding skin or clothing contact.
    e. After flushing is complete, applies dry sterile dressing.

2. Dry (non-soluble)

    a. Dry lime

        1) Brushes from clothing and skin
        2) Flushes with LARGE quantity of water

    b. Phenol

        1) Places patient under running water
        2) Washes affected area with alcohol or oil

D. Chemical burns to eyes

1. Flushes the eyes for at least 20 minutes
2. Covers eyes with sterile moist dressing

XVIII. Demonstrate the use, decontamination, disinfection, and disposal of personal protective equipment used for protection from infection. 2-8.18

This objective will be accomplished using the specific PPE equipment designated for protection from infection by the AHJ in accordance with practices and procedures set forth by the AHJ.

XIX. Demonstrate the following procedures as defined in the American Heart Association or American Red Cross CPR manuals: 2-8.19 (*3-17.3*)

A. Adult single-rescuer CPR. **2-8.19.1**
B. Child single-rescuer CPR. **2-8.19.2**
C. Infant single-rescuer CPR. **2-8.19.3**
D. Adult two-rescuer CPR. **2-8.19.4**
E. Management of an obstructed airway in a conscious adult**. 2-8.19.5**
F. Management of an obstructed airway in an unconscious adult. **2-8.19.6**
G. Management of an obstructed airway in a conscious child. **2-8.19.7**
H. Management of an obstructed airway in an unconscious child. **2-8.19.8**
I. Management of an obstructed airway in a conscious infant. **2-8.19.9**
J. Management of an obstructed airway in an unconscious infant. **2-8.19.10**

The above objectives shall be satisfactorily completed in the presence of a certified American Hear Association or American Red Cross CPR Instructor and result in the issuance of a CPR provider card, where applicable.

A. Airway

1. Modified Jaw Thrust: used for trauma victims. The firefighter:

   a. Kneels beside patient's head
   b. Place his/her hands on both sides of the patient's head and holds the head in such a way that the neck remains in a fixed, neutral position without being extended.
   c. Places his/her fingers behind the angle of the lower jaw on each side of the patient's head.
   d. Moves the jaw forward with his/her fingers, taking care not to tilt the head back or move it to either side.

2. Head-tilt chin-lift: The firefighter:

   a. Kneels beside patient's head.
   b. Places one hand on the patient's forehead and press back firmly with his/her palm.
   c. Grasps the patient's chin with the fingertips of his/her other hand and lifts up and forward until the teeth are nearly closed.

3. Jaw-thrust: The firefighter:

   a. Kneels above the patient's head.
   b. Places his/her hands on both sides of the patient's head with his/her fingers behind the angles of the lower jaw and his/her thumbs on either side of the lower lip.

c. Pushes the jaw forward as he/she tilt the head backwards.
d. Opens the lower lips with his/her thumbs.

4. Face-down

a. Kneels at the patient's side.
b. Grasps the patient's farthest shoulder with one hand and the farthest hip with the other.
c. Rolls the patient gently toward his/her until they are resting on the side nearest the firefighter.

B. Breathing

1. Leans over the patient's head with his/her ear within an inch of the victim's mouth and nose.
2. Looks to see whether the chest rises or falls.
3. Listens for air movement at the nose and mouth.
4. Feels for air movement on firefighter's cheek or ear.

C. Circulation

1. Feels carotid pulse on near side of patient for 5-10 seconds with firefighter's index and middle fingers.

D. Severe bleeding

1. Quick visual of the patient and/or surrounding area

E. Removal of Airway Obstruction

1. Conscious Adult

a. Stands behind the standing or sitting patient and wrap his/her arms around the patient's waist.
b. Makes a fist with one hand and place the thumb side of his/her fist against the patient's abdomen, slightly above the navel and well below the xiphoid process.
c. Grasps the fist with his/her other hand and presses the fist into the patient's abdomen 6 to 10 times with quick, inward, and upward thrusts.
d. Each thrust should be distinct, and delivered with the intent of relieving the airway obstruction.

2. Unconscious Adult

   a. Either kneels at the patient's side or straddles the patient's body so that he/she is facing the patient's head.
   b. Places the heel of one of he/she's hands on the patient's abdomen, slightly above the navel and well below the xiphoid process.
   c. With his/her other hand, presses the heel of that hand into the patient's abdomen with 6 to 10 sharp, forward thrusts.
   d. Moves back to the patient's head, and hooks his/her thumb over the patient's teeth and pulls the jaw up.
   e. Looks into the patient's mouth. If he/she sees a foreign object, carefully pulls it out.
   f. Opens the patient's airway using the head-tilt, chin-lift method.
   g. Pinches the patient's nose closed with the thumb and index finger of the firefighter's hand that is on the forehead, as he/she maintains pressure on the forehead with the heel of the same hand.
   h. The firefighter opens his/her mouth widely, takes a deep breath, and blows into the patient's mouth.
   i. Watches for the rise and fall of the patient's chest.
   j. If he/she is unable to ventilate the patient's lungs, re-positions the head and tries again.
   k. Repeats steps "a" through "j" until he/she can provide ventilation for the lungs.

3. Infants

   a. Holds the infant's face down so they straddle the firefighter's forearm.
   b. Holds the infant's head lower than the rest of the body and supports it by holding the jaw.
   c. The firefighter rests his/her arm on his/her thigh and delivers four sharp back blows between the infant's shoulder blades.
   d. Places his/her free arm along the infant's back so that his/her head and body are sandwiched between the firefighter's arms and hands.
   e. Carefully turns the infant over and position him/her on the firefighter's thighs, so that the infant's head is lower than the rest of the his/her body.
   f. Imagines a line across the infant's chest that intersects both nipples. Place three fingers of one of the firefighter's hand just below this line where it intersects with the sternum.

g. Lifts the finger closest to the nipple line, and with the remaining two fingers, administers four chest thrusts.
h. Looks into the infant's mouth and removes obstruction, if possible.
i. Repeats steps a through h, if you cannot see obstruction.

XX. Demonstrate the use of a resuscitation mask in the performance of single- and two-rescuer CPR. 2-8.20 (*3-17.4*)

The above objective shall be satisfactorily completed using the specific resuscitation mask(s) designated for use in performing CPR by the AHJ.

XXI. Demonstrate a primary survey for life-threatening injuries. 2-8.21 (*3-17.5*) (Within 60 seconds)

A. Checks for the following:

1. Weapons
2. Downed wires
3. Leaking gasoline
4. Hazardous materials
5. Fire
6. Confined space
7. Terrain
8. Stability of vehicle or structure

B. Assesses the following visually when approaching:

1. Is the patient awake?
2. Does the situation or environment pose a threat of further harm to the patient?
3. The position of the patient
4. Any objects or people in the area of the patient that may have contributed to the injury or illness
5. Skin color of the patient (cyanotic, ashen, flushed)

C. Upon reaching the patient, the first responder must conduct a primary survey:

1. Checks level of consciousness
2. Checks airway
3. Checks breathing
4. Checks circulation
6. Checks for major bleeding

XXII. Demonstrate three procedures for controlling external bleeding. 2-8.22 (*3-17.7*)

A. Direct pressure

1. Places a sterile dressing over the wound (controls most bleeding)
2. Applies pressure directly over wound using fingers or heel of hand.
3. Maintains pressure three to five minutes.
4. If injury is arm or leg, elevates it considering exceptions.
5. When bleeding is under control, applies a pressure bandage over the wound.
6. Applies a universal dressing over original dressing firmly and secure.
7. Checks for proper circulation and adjusts as needed to provide blood flow below wound. (Does not remove dressing once in place).

B. Pressure Points

Compresses the artery supply area, considering exceptions

C. Tourniquet

1. Applies a pad over the artery to be compressed.
2. Places a folded or rolled cloth pad on the artery at that point.
3. Uses a wide, flat material, such as a cravat or folded handkerchief.
4. Wraps a tourniquet twice around the extremity and ties a half knot. Never remove once applied.
5. Places a stick, pencil or similar object on top of the half knot. Ties the ends of the tourniquet in a square knot above the tourniquet.
6. Twists the stick just enough to stop the bleeding.
7. Ties the ends of the tourniquet in place.
8. Marks TK and the time applied on the patient's forehead.

XXIII. Demonstrate the emergency medical care for a victim of traumatic shock. 2-8.23 (*3-17.10*)

A. Establishes an airway
B. Administers oxygen
C. Treats the cause of shock, by controlling bleeding or splinting fractures if necessary
D. Positions patient to reduce stress to vital systems; lying down with legs elevated.
E. Prevents loss of body heat.
F. Avoids rough handling of patient
G. Does not give patient food or drink

H. Monitors vital signs and level of consciousness frequently.
I. Arranges for immediate transportation to a medical facility.

XXIV: Demonstrate the emergency medical care for victims of ingested poisons and drug overdoses. 2-8.24 (*3-17.11*)

A. Treatment for ingested/inhaled poisoning

1. Performs initial assessment (ABC's)
2. Tries to identify the substance(s) the victim ingested or inhaled
3. Tries to determine how much (number of pills, amount of liquid, etc.) of the substance was ingested
4. Determines plan of action:

a. Substances intended to be swallowed or inhaled: Calls Poison Control Center or nearest medical facility immediately and follow instructions.
b. Substances not intended to be swallowed: gives the victim one or two glasses of water or milk to dilute the poison and calls Poison Control Center or nearest medical facility

B. Treatment for drug overdose

1. Performs initial assessment (ABC's)
2. Contacts nearest Poison Control Center or hospital with essential information
3. Performs basic life support as necessary and transports to hospital immediately.
4. Administers first aid as directed by Poison Control Center or hospital.
5. Speaks to patient in a soothing voice and try to reduce anxiety and/or apprehension.
6. Calls for police assistance immediately with agitated, combative or violent patients.

XXVI. Demonstrate the emergency medical care for a fracture. 2-8.26

A. Slinging and swathing to immobilize the arm against the chest.

1. Asks patient to place injured arm in comfortable position across the chest.
2. If patient cannot hold arm in place, has partner or another individual hold it.

3. Slips a triangular bandage between the injured extremity and the patient's chest with the long edge of the bandage laid along the patient's side opposite the injury with one point of the bandage extending beneath the elbow on the injured side.
4. Brings the bottom edge of the bandage up and over the forearm and ties it to the other end of the bandage to one side of the patient's neck.
5. Ties or pins the pointed the pointed edge of the sling at the elbow to form a cradle for the patient's elbow.
6. Puts another triangular bandage around the patient's chest and injured arm over sling.
7. Brings the swathe ends together under the arm on the uninjured side and puts padding beneath the arm to protect the patient's armpit.

B. Pillow splint

1. Molds the pillow around the injured extremity
2. Fasten in place with safety pins or cravats

C. Rigid splints

1. One firefighter grasps the extremity above and below the fracture site and applies gentle traction.
2. Another firefighter attaches the splint to the injured extremity by wrapping the limb and splint in self-adhering bandages (should be tight enough to hold splint, but not so tight as to cut off circulation)